Complete Summary

GUIDELINE TITLE

Practice parameters for sigmoid diverticulitis.

BIBLIOGRAPHIC SOURCE(S)

Rafferty J, Shellito P, Hyman NH, Buie WD, Standards Committee of American Society of Colon and Rectal Surgeons. Practice parameters for sigmoid diverticulitis. Dis Colon Rectum 2006 Jul;49(7):939-44. [55 references] PubMed

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Practice parameters for the treatment of sigmoid diverticulitis. Standards Task Force. American Society of Colon and Rectal Surgeons. Dis Colon Rectum 2000 Mar;43(3):289.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Acute sigmoid diverticulitis (complicated and uncomplicated)

Note: Complicated diverticulitis is defined as acute diverticulitis accompanied by abscess, fistula, obstruction, or free intra-abdominal perforation.

GUIDELINE CATEGORY

Diagnosis
Evaluation

Management
Treatment

CLINICAL SPECIALTY

Colon and Rectal Surgery
Emergency Medicine
Family Practice
Internal Medicine
Surgery

INTENDED USERS

Health Care Providers
Patients
Physicians

GUIDELINE OBJECTIVE(S)

To provide practice parameters for the evaluation and management of sigmoid diverticulitis

TARGET POPULATION

Adults with sigmoid diverticulitis

INTERVENTIONS AND PRACTICES CONSIDERED

1. Initial evaluation of suspected acute diverticulitis:
    - History and physical examination
    - Differential diagnosis
    - Complete blood count (CBC)
    - Urinalysis
    - Plain abdominal radiographs
    - Computed tomography (CT) scan
    - Other studies, if appropriate: contrast enema x-ray, cystography, ultrasound, flexible sigmoidoscopy
2. Medical treatment
    - Dietary modifications
    - Oral or intravenous antibiotics
    - Long-term fiber supplementation after recovery
    - Radiologically guided percutaneous drainage
    - Post-recovery re-evaluation (colonoscopy or contrast enema x-ray) to confirm the diagnosis
3. Emergency surgery (sigmoid colectomy including sigmoid resection and anastomosis)
4. Elective surgery (sigmoid colectomy, colon resection)

MAJOR OUTCOMES CONSIDERED

- Efficacy of treatment

- Rates of recurrence
- Sensitivity, specificity, predictive value, and accuracy of selected screening tests

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

These guidelines are built on the last set of guidelines for the treatment of diverticulitis published by The American Society of Colon and Rectal Surgeons (ASCRS) in 2000. Additional pertinent information from the published literature from January 2000 to August 2005 was retrieved and reviewed. Searches of MEDLINE were performed by using keywords: diverticulitis, diverticulosis, peridiverticulitis, and fistula.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Levels of Evidence

I. Meta-analysis of multiple well-designed, controlled studies; randomized trials with low false-positive and low false-negative errors (high power)
II. At least one well-designed experimental study; randomized trials with high false-positive or high false-negative errors or both (low power)
III. Well-designed, quasi-experimental studies, such as nonrandomized, controlled, single-group, preoperative-postoperative comparison, cohort, time, or matched case-control series
IV. Well-designed, nonexperimental studies, such as comparative and correlational descriptive and case studies
V. Case reports and clinical examples

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Grades of Recommendations

A. Evidence of Type I or consistent findings from multiple studies of Type II, III, or IV
B. Evidence of Type II, III, or IV and generally consistent findings
C. Evidence of Type II, III, or IV but inconsistent findings
D. Little or no systematic empirical evidence

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Not stated

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Not applicable

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

The levels of evidence (I-V) and the grades of recommendations (A-D) are defined at the end of the "Major Recommendations" field.

Initial Evaluation of Acute Diverticulitis

1. The initial evaluation of a new patient with suspected acute diverticulitis should include a problem-specific history and physical examination; a complete blood count (CBC), urinalysis, and plain abdominal radiographs may be useful in selected clinical scenarios. **Level of Evidence: V; Grade of Recommendation: D**

   A diagnosis of acute diverticulitis often can be made based on history and physical findings, especially in patients who have had previously confirmed diverticulitis. However, in many cases of abdominal pain, it may be uncertain whether acute diverticulitis is present and adjunctive studies are helpful and warranted. Alternative diagnoses include irritable bowel syndrome, gastroenteritis, bowel obstruction, inflammatory bowel disease, appendicitis, ischemic colitis, colorectal cancer, urinary tract infection, kidney stone, and gynecologic disorders. An elevated white blood cell count often is helpful in

confirming the presence of an inflammatory process. Pyuria may reveal a urinary tract infection, and hematuria may suggest a kidney stone. Plain abdominal films may show pneumoperitoneum from a perforated viscus, or signs of bowel obstruction.

2. Computerized tomography (CT) scan of the abdomen and pelvis is usually the most appropriate imaging modality in the assessment of suspected diverticulitis. **Level of Evidence: III; Grade of Recommendation: A**

   Accuracy of CT is enhanced if oral, intravenous, and rectal contrast are used. It is highly sensitive and specific, with a low false-positive rate. Complications, such as phlegmon, abscess, adjacent organ involvement, fistula, and distant septic complications, can be identified. A large abscess found on initial CT scan may prompt early percutaneous drainage and, consequently, shorten the hospitalization. Severity staging by CT scan may allow selection of patients most likely to respond to conservative therapy. The severity of diverticulitis at the time of the first CT scan not only predicts an increased risk of failure of medical therapy on index admission but also a high risk of secondary complications after initial nonoperative management. The incidence of a subsequent complication is highest in patients with severe disease on the initial CT scan.

3. Contrast enema x-ray, cystography, ultrasound, and endoscopy are sometimes useful in the initial evaluation of a patient with suspected acute diverticulitis. **Level of Evidence: III; Grade of Recommendation: B**

   A gently administered single contrast enema x-ray may show stenosis/spasm with intact mucosa and associated surrounding diverticulosis. Strictures in diverticulitis are usually longer and more regular than in carcinoma. Fistulas and abscesses may be seen as well. Cystography is occasionally useful to confirm a colovesical fistula but may only demonstrate bladder wall thickening even if a fistula is present. Ultrasound of an inflammatory mass may help distinguish a phlegmon from an abscess, although overlying small bowel gaseous distension often obscures sonographic findings. Endoscopy has limited use in the acute setting and may exacerbate inflammation or cause perforation. Nevertheless, in selected cases with ambiguous features, a limited and gentle flexible sigmoidoscopy may be helpful in making an accurate diagnosis.

Medical Treatment of Acute Diverticulitis

For the purposes of this discussion, complicated diverticulitis is defined as acute diverticulitis accompanied by abscess, fistula, obstruction, or free intra-abdominal perforation.

1. Nonoperative treatment typically includes dietary modification and oral or intravenous antibiotics. **Level of Evidence: III; Grade of Recommendation: B**

   Uncomplicated diverticulitis may be managed as an outpatient (dietary modification and oral antibiotics) for those without appreciable fever, excessive vomiting, or marked peritonitis, as long as there is the opportunity

for follow-up. The patient should be able to take liquids and antibiotics by mouth. Hospitalization for treatment (dietary modification and intravenous antibiotics) is usually best if the above conditions are not met, or if the patient fails to improve with outpatient therapy. Antibiotics should be selected to treat the most common bacteria found in the colon: gram-negative rods and anaerobic bacteria. Single and multiple antibiotic regimens are equally effective, as long as both groups of organisms are covered. Long-term fiber supplementation after recovery from a first episode of diverticulitis may prevent recurrence in >70 percent of patients followed for more than five years.

2. Radiologically guided percutaneous drainage is usually the most appropriate treatment for patients with a large diverticular abscess. **Level of Evidence: III; Grade of Recommendation: B**

   Patients with abscesses larger than 2 cm are candidates for percutaneous catheter drainage; the majority of patients can avoid an emergency operation and a multistaged approach involving a stoma by using this intervention.

Evaluation after Recovery from Acute Diverticulitis

1. After resolution of an initial episode of acute diverticulitis, the colon should be adequately evaluated to confirm the diagnosis. **Level of Evidence: V; Grade of Recommendation: D**

   Colonoscopy or contrast enema x-ray (probably with flexible sigmoidoscopy) is appropriate to exclude other diagnoses, primarily cancer, ischemia, and inflammatory bowel disease.

Emergency Surgery for Acute Diverticulitis

1. Urgent sigmoid colectomy is required for patients with diffuse peritonitis or for those who fail nonoperative management of acute diverticulitis. **Level of Evidence: III; Grade of Recommendation: B**

   Immunosuppressed or immunocompromised patients are more likely to present with perforation or fail medical management, so a lower threshold for urgent or elective surgery should apply to them. After emergency sigmoid resection, anastomosis might be performed, depending on the status of the patient and the severity of intra-abdominal contamination (Hinchey classification). A traditional Hartmann procedure is commonly performed (sigmoid colectomy, end sigmoid or descending colostomy, and closure of the rectal stump); however, the later second-stage operation to close this colostomy can be technically difficult. Furthermore, such "temporary" colostomies often are never closed.

Elective Surgery for Acute Diverticulitis

1. The decision to recommend elective sigmoid colectomy after recovery from acute diverticulitis should be made on a case-by-case basis. **Level of Evidence: III; Grade of Recommendation: B**

After successful medical treatment of an episode of acute diverticulitis, careful judgment is required concerning whether to proceed with subsequent elective colon resection. The decision to recommend surgery should be influenced by the age and medical condition of the patient, the frequency and severity of the attack(s), and whether there are persistent symptoms after the acute episode. Most patients who present with complicated diverticulitis do so at the time of their first attack, therefore, a policy of elective colon resection after recovery from uncomplicated acute diverticulitis might not decrease the likelihood of later emergency surgery or overall mortality. Therefore, the number of attacks of uncomplicated diverticulitis is not necessarily an overriding factor in defining the appropriateness of surgery. As noted earlier, CT graded severity of a first attack is a predictor of an adverse natural history and may be helpful in determining the need for surgery. Inability to exclude carcinoma is another appropriate indication for colectomy.

There is no clear consensus regarding whether younger patients (younger than aged 50 years) treated for diverticulitis are at increased risk of complications or recurrent attacks. Nevertheless, because of their longer life span, younger patients will have a higher cumulative risk for recurrent diverticulitis, even if the virulence of their disease is no different than that of older patients.

2. Elective colon resection should typically be advised if an episode of complicated diverticulitis is treated nonoperatively. **Level of Evidence: III; Grade of Recommendation: B**

   After percutaneous drainage of a diverticular abscess, a later colectomy usually should be planned, because 41 percent of patients will otherwise develop severe recurrent sepsis. The safety of expectant management alone in this scenario remains suspect, although nonoperative management has been suggested.

3. The resection should be carried proximally to compliant bowel and extend distally to the upper rectum. **Level of Evidence: III; Grade of Recommendation: B**

   It is usually sufficient to remove only the most severely affected segment; however, the proximal margin of resection should be in an area of pliable colon without hypertrophy or inflammation. Not all of the diverticula-bearing colon must be removed. Usually a sigmoid colectomy will suffice; however, occasionally the proximal resection margin must extend well into the descending colon or to the left transverse colon. Distally, the margin of resection should be where the taenia coli splay out onto the upper rectum. After sigmoid colectomy for diverticulitis, an important predictor of recurrent diverticulitis is a colosigmoid rather than a colorectal anastomosis.

4. When a colectomy for diverticular disease is performed, a laparoscopic approach is appropriate in selected patients. **Level of Evidence: III; Grade of Recommendation: A**

   Laparoscopic colectomy may have advantages over open laparotomy, including less pain, smaller scar, and shorter recovery. There is no increase in

early or late complications. Cost and outcome are comparable to open resection. Laparoscopic surgery is acceptable in the elderly and seems to be safe in selected patients with complicated disease.

Definitions:

Levels of Evidence

I. Meta-analysis of multiple well-designed, controlled studies; randomized trials with low false-positive and low false-negative errors (high power)
II. At least one well-designed experimental study; randomized trials with high false-positive or high false-negative errors or both (low power)
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C. Evidence of Type II, III, or IV but inconsistent findings
D. Little or no systematic empirical evidence

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified and graded for each recommendation (see "Major Recommendations" field).

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Appropriate evaluation and management of patients with sigmoid diverticulitis

POTENTIAL HARMS

- Computed tomography (CT) has a low false-positive rate.
- Endoscopy has limited use in the acute setting and may exacerbate inflammation or cause perforation.

- The second-stage operation of Hartmann procedure to close the colostomy can be technically difficult. Furthermore, "temporary" colostomies often are never closed.

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

These guidelines are inclusive and not prescriptive. Their purpose is to provide information on which decisions can be made, rather than dictate a specific form of treatment. It should be recognized that these guidelines should not be deemed inclusive of all proper methods of care or exclusive of methods of care reasonably directed to obtaining the same results. The ultimate judgment regarding the propriety of any specific procedure must be made by the physician in light of all of the circumstances presented by the individual patient.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Living with Illness

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

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ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2000 (revised 2006 Jul)

GUIDELINE DEVELOPER(S)

American Society of Colon and Rectal Surgeons - Medical Specialty Society

SOURCE(S) OF FUNDING

American Society of Colon and Rectal Surgeons

GUIDELINE COMMITTEE

Standards Practice Task Force of the American Society of Colon and Rectal Surgeons

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

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GUIDELINE AVAILABILITY

Electronic copies: Available in Portable Document Format (PDF) from the American Society of Colon and Rectal Surgeons (ASCRS) Web site.

Print copies: Available from ASCRS, 85 W. Algonquin Road, Suite 550, Arlington Heights, Illinois 60005.

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on February 12, 2001. The information was verified by the guideline developer as May 4, 2001. This NGC summary was updated by ECRI Institute on May 31, 2007.

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